

Notice No.1

Rules and Regulations for the Construction and Classification of Submersibles and Diving Systems, July 2019

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note that corrigenda amends to paragraphs, Tables and Figures are not shown in their entirety.

Issue date: November 2019

Amendments to	Effective date	IACS/IMO implementation (if applicable)
Part 3, Chapter 2, Sections 1, 3, 4, 6 & 7	Corrigenda	N/A

Part 3, Chapter 2

Acrylic Windows

■ Section 1 General

1.3 Limiting conditions

1.3.1 The ~~requiring~~ requirement of these Rules do not apply to acrylic plastic Windows under the following conditions:

- (a) Operating temperatures below minus 20°C ~~18°C~~ and above +66°C;

■ Section 3 Window geometry and thickness

3.1 General

Figure 2.3.2 Standard Window Type and Geometry – 2 ~~need to get HQ from Energy~~

3.2 Thickness

3.2.1 The thickness of the window is a function of window geometry, maximum operating pressure, and operating temperature at the maximum operating pressure. ~~Where not covered by these rules, windows~~ Windows may be designed using ASME PVHO-1 or equivalent national or international code/standard ~~National or International Standard in agreement with LR.~~

■ Section 4 Other components

4.4 Seals – Refer to ASME PVHO-1

4.5 Retaining Rings rings – Refer to ASME PVHO-1

4.6 Dimensional tolerances and surface finish – Refer to ASME PVHO-1

4.6.2 The minimum ~~Window~~ window thickness shall be equal to or greater than the nominal value determined using the maximum operating conditions.

4.6.3 The major diameter of the conical bearing surface on a ~~Window~~ window shall be within $+0/-0,002D_o$ of the nominal value. Where D_o is shown in the *Figure 2.4.1 Seat cavity requirements (Also refer to ASME PVHO-1)*.

4.6.5 The included conical angle of the ~~Window~~ window seat in the flange must be within $+0/0,25$ degrees of the nominal value.

4.6.7 The spherical surfaces of a window shall not differ from an ideal ~~Spherical~~ spherical sector by more than $\pm 0,5$ per cent of the specified nominal external ~~Spherical~~ spherical radius for the given standard CF values.

4.6.8 Tolerances on a flat disc ~~Window~~ window diameter are to be in accordance with *Figure 2.4.1 Seat cavity requirements (Also refer to ASME PVHO-1) or ASME PVHO-1.*

4.6.11 All other surfaces shall be finished to 2,5 μm RMS minimum. Saw cut finish is not acceptable on any ~~Window~~ window surface.

■ Section 6 Installation of windows

6.1.2 ~~See also Pt 3, Ch 1, 10.1 General 10.1.8.~~

■ Section 7 Testing and inspection

7.1 Pressure testing

7.1.2 The window may be pressure tested together with the chamber after installation into the chamber or placed within a test fixture whose window seat dimensions, retaining ring, and the seals are identical to the chambers in which case the test pressure is to be the design pressure for the chamber. In no case must the test pressure exceed 1,5 times the design pressure or 138 N/mm², whichever is the lesser value. During this test, the temperature of the pressurizing ~~pressurizing~~ medium should be the design

temperature of the window. An alternate test procedure in excess of design pressure and lower temperature may be adopted as specified in ASME PVHO-1 with in within the limitations indicated. The test pressure shall be maintained for a minimum of one hour but not more than 4 four hours. The test may be carried out using a test fixture whose window seat dimensions, retaining rings and seals are identical to those of the chamber.

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